



Comments on the Draft State of the Science Report on the Bioaccumulation and Transformation of DecaBDE

May 27, 2009

The David Suzuki Foundation, Ecojustice, Canadian Environmental Law Association, and Environmental Defence respectfully submit these comments pursuant to the notice published in Canada Gazette, Part I, on March 28, 2009. We appreciate Environment Canada's review of recently published new information on the bioaccumulation and transformation of decabromodiphenyl ether (decaBDE) and agree with the summary conclusions of the draft state of the science report, namely:

- DecaBDE may contribute to the formation of bioaccumulative, and/or potentially bioaccumulative transformation products such as lower brominated BDEs in organisms and in the environment; and
- DecaBDE is available for uptake in organisms and may accumulate to high and potentially problematic levels in certain species.

In February 2007, Ecojustice (then Sierra Legal Defence Fund) filed a notice of objection to Environment Canada's PBDE Regulations on behalf of the David Suzuki Foundation, Canadian Environmental Law Association, and Environmental Defence. Our objection argues, inter alia, that:

- The evidence presented in Environment Canada's screening assessment for the proposed regulation is now outdated: it included information up until October 2004 only. New evidence shows that decaBDE bioaccumulates in aquatic and terrestrial organisms, including human beings. Recent studies also point to additional evidence of the debromination of decaBDE into lower-brominated congeners. The new evidence points to threats of serious damage from PBDEs, and application of the precautionary principle requires effective Government action.
- The higher-brominated PBDEs such as decaBDE can debrominate and thus transform into the lower-brominated PBDEs, which are bioaccumulative and subject to a ban under the proposed regulation. Given the higher-brominated PBDEs are precursors to the lowerbrominated PBDEs, the higher PBDEs should also be subjected to a full ban and virtual elimination, consistent with the Toxic Substances Management Policy, precedence, and the precautionary principle.
- The criteria in the *Persistence and Bioaccumulation Regulations* are met in relation to the higher congener PBDEs. If neither bioaccumulation nor bioconcentration factors for a substance can be determined, the logarithm of the octanol-water partitioning coefficient (log Kow) is the measure of bioaccumulation. The log Kow for decaBDE exceeds the minimum criteria required for virtual elimination under CEPA.

The draft state of the science report largely addresses the first issue by updating the information analysis in the original screening assessment to include information published up to March 2008. It also treats the second issue of decaBDE debromination, or transformation into lower brominated PBDEs.

We note, however, that as a result of the long delay in releasing the draft state of the science report, the information it reviews was already one full year out of date by the time the draft was published. The delay also pushed back timelines for risk management activities to reduce exposure to decaBDE. We hope that Environment Canada will take steps to follow through on established timelines and avoid such delays in the future.

With respect to the third issue, the analysis in the draft state of the science report is unsatisfactory. While agreeing that decaBDE “is bioavailable and may accumulate rapidly to high and potentially problematic levels in certain species,” the authors conclude that decaBDE does not meet the regulatory thresholds for bioaccumulation. The state of the science report acknowledges difficulties and uncertainties in calculating bioaccumulation and biomagnification factors for decaBDE. As discussed in more detail in our notice of objection, it would be appropriate under these circumstances to defer to the logarithm of the octanol-water partitioning coefficient ($\log K_{ow}$) as the measure of bioaccumulation. The estimated $\log K_{ow}$ for decaBDE is in the range of 6.27 to 9.97, which in fact does meet the regulatory threshold for determination as bioaccumulative ($\log K_{ow} \geq 5$).

While the state of the science report provides sufficient basis for strengthening regulation of decaBDE, as proposed in the draft Revised Risk Management Strategy for PBDEs, we continue to have concerns about the adequacy and interpretation of the *Persistence and Bioaccumulation Regulations*. In a 2008 response to a public petition to the Commissioner of the Environment and Sustainable Development (Office of the Auditor General of Canada), Environment Canada indicated that these regulations were under review. We would be interested to know how this review is progressing, what issues are being considered, and whether the outcome might influence the determination of bioaccumulation for decaBDE. It would be appropriate for the state of the science report to mention that the reference regulations are under review and to discuss the potential relevance of the review to the analysis.

Environment Minister Jim Prentice has indicated to Ecojustice that he will respond to our notice of objection on the basis of information in the state of the science report. We encourage the minister to establish an independent board of review to consider, in particular, issues related to bioaccumulation and the adequacy and interpretation of the *Persistence and Bioaccumulation Regulations* for assessments under the *Canadian Environmental Protection Act, 1999*.

Submitted to the Executive Director, Program Development and Engagement Division, Environment Canada, by e-mail to: Existing.Substances.Existantes@ec.gc.ca

Please note, additional comments on the draft state of the science report have been submitted separately by the Canadian Environmental Law Association and Ecojustice Canada.

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